

Case 3012

Coluber infernalis* Blainville, 1835 and *Eutaenia sirtalis tetrataenia* Cope in Yarrow, 1875 (currently *Thamnophis sirtalis infernalis* and *T. s. tetrataenia*; Reptilia, Squamata): proposed conservation of the subspecific names by the designation of a neotype for *T. s. infernalis

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Abstract. The purpose of this application is to conserve the usage of the subspecific names of *Thamnophis sirtalis infernalis* (Blainville, 1835) for the California red-sided garter snake (family COLUBRIDAE) which is found along the Californian coast, and of *T. s. tetrataenia* (Cope in Yarrow, 1875) for the San Francisco garter snake from the restricted area of the San Francisco Peninsula. It is possible that the holotype of *T. s. infernalis* is a specimen of *T. s. tetrataenia*, formally rendering the name *tetrataenia* a junior synonym of *infernalis*. It is proposed that the holotype of *infernalis* be set aside and a neotype designated in accord with accustomed usage.

Keywords. Nomenclature; taxonomy; Reptilia; Squamata; COLUBRIDAE; California red-sided garter snake; San Francisco garter snake; *Thamnophis sirtalis infernalis*; *Thamnophis sirtalis tetrataenia*; California.

1. In 1835 Blainville (pp. 291–292, pl. 26, figs. 3, 3a) described *Coluber infernalis*, a garter snake, from a specimen collected by Paolo Emilio Botta in 1827 or 1828 (Museum National d'Histoire Naturelle, Paris, catalog no. MNHN 846) from an indeterminate locality in California. Baird & Girard (1853, p. 26) and Bocourt (1892, p. 40) subsequently placed *C. infernalis* in *Eutaenia* Baird & Girard, 1853. Van Denburgh & Slevin (1918, p. 198) treated *infernalis* as a subspecies of *Thamnophis sirtalis* (Linnaeus, 1758), and Fitch (1941) restricted the distribution of *T. s. infernalis* to the Pacific coast region of California, based on Botta's supposed collecting sites and on consistent taxonomic differences between coastal and interior or northern *T. sirtalis*.

2. In 1875 Cope (in Yarrow, p. 546) described *Eutaenia sirtalis tetrataenia* sufficiently to make the name available. No locality or specimens were mentioned, but later in the same year Cope's *Checklist of North American Batrachia and Reptilia* was published and recorded (1875, p. 41) that *tetrataenia* had been collected from Pitt (Pit) River, northeastern California. Yarrow (1883, p. 128) and Cope (1892, p. 665; 1900, p. 1081) listed *E. s. tetrataenia* and recorded two specimens from 'Pitt River, Cal.' (catalogued as no. 866 in the National Museum of Natural History, Washington; renumbered USNM 21383, 21384); the specimens are labeled as collected by Dr J.S. Newberry (see Fitch, 1941, p. 581; Fox, 1951, p. 259). Unlike these, a third specimen from Puget Sound, Washington, listed by Cope (1892, 1900), is probably not an original syntype (see Fitch, 1941, pp. 584–585; Fox, 1951, pp. 258–259). Garman (1883) included *tetrataenia* in *E. s. parietalis*, and Bocourt (1892) and Van Denburgh & Slevin (1918, p. 199) included it in *E. (Thamnophis) s. infernalis*. Fitch (1941, pp. 581–585) showed that the distinctive red-striped color patterns of the syntypes of *T. s. tetrataenia* were unlike the patterns of any *T. sirtalis* obtained since Newberry's time from the Pit River, but could not explain the origin of the syntypes. He resurrected *tetrataenia* as the valid name for the Pit River and similar populations because they differed taxonomically from the California coast *T. sirtalis infernalis*, and (pp. 581, 585) designated specimen USNM 21384, which was probably that figured by Cope (1900, p. 1080, fig. 305), as the lectotype of *tetrataenia*. Fox (1951) discovered populations of distinctively-striped *T. sirtalis*, identical to Cope's 'Pitt River' *E. s. tetrataenia*, on the San Francisco Peninsula of northern California, and cited expedition records to show that Newberry had remained in San Francisco and collected vigorously while the rest of the expedition traveled to the Pit River. Fox (1951, pp. 260–264) then reassigned the name *T. s. tetrataenia* to the population of *T. sirtalis* which occupies the San Francisco Peninsula, excluding the San Francisco Peninsula population from the coastal *T. s. infernalis*, and renamed the inland populations (which had been called *T. s. tetrataenia* by Fitch, 1941) as *T. s. fitchi*.

3. For nearly 50 years, since the mystery of the provenance of Cope's (in Yarrow, 1875) *T. s. tetrataenia* was solved, the nomenclature of the subspecies of *T. sirtalis* has remained stable. With the exception of Boundy & Rossman (1995; see para. 5 below) and Rossman, Ford & Seigel (1996), all authors known to us have adopted Fitch's (1941) taxonomic arrangement for *T. s. infernalis* and *T. s. tetrataenia* with Fox's (1951) locality restrictions (i.e. *infernalis* from the Pacific coast and *tetrataenia* from the San Francisco Peninsula).

4. The literature in which the name *T. s. tetrataenia* appears is voluminous and diverse. We have deposited with the Commission Secretariat a representative list of 127 titles that have appeared since Fox's (1951) revision, only about a quarter of which are technical books and papers. Numerous field guides (for example, Stebbins, 1985), popular accounts (for example, Mattison, 1988), general textbooks (for example, Storer, Usinger, Stebbins & Nybakken, 1972), major newspaper articles (for example, Smith, 1978), legal publications (for example, California Department of Fish and Game, 1993), and particularly papers and books from the conservation literature (for example, Thelander & Crabtree, 1994) discuss *T. s. tetrataenia* as an inhabitant solely of the San Francisco Peninsula, and much of the same literature refers to *T. s. infernalis* as an allopatric form that does not occur on the San Francisco

Peninsula. Furthermore, literature citations of (San Francisco Peninsula) *T. s. tetrataenia* have increased dramatically during the past 25 years because of increasing popular/conservationist interest. The name *tetrataenia* is established in national (Allen, 1988) and international legislation for the protection of the San Francisco Peninsula subspecies (1993, *World checklist of threatened amphibians and reptiles*; and 1996, *Red List of Threatened Animals*).

5. Boundy & Rossman (1995) showed that the holotype of *T. s. infernalis* (MNHN 846 in the Muséum National d'Histoire Naturelle, Paris) is similar in coloration to Cope's (in Yarrow, 1875) *E. s. tetrataenia*. They demonstrated by color pattern evaluation that this specimen may have originated on the San Francisco Peninsula, which was within reach of Botta's (MS) recorded collecting sites. On this basis, Boundy & Rossman (1995) proposed that *tetrataenia* be treated as a junior synonym of *infernalis*, that the name *infernalis* be restricted to the San Francisco Peninsula snake population, and that the California coast subspecies of *T. sirtalis* (exclusive of the San Francisco Peninsula snakes), hitherto called *infernalis*, be included in *T. s. concinnus* Hallowell, 1852, which is currently applied to the red-headed subspecies of *T. sirtalis* of coastal Oregon. This last proposal is based solely on the red head characteristic of *T. s. concinnus* and *T. s. infernalis* (and Cope's *T. s. tetrataenia*), and is not based on any published systematic re-evaluation.

6. Adoption of the rearrangement of the subspecific names for western garter snakes proposed by Boundy & Rossman (1995) would significantly and unnecessarily affect well-established nomenclature, would confuse the lay audience (which is very interested in *T. s. tetrataenia* because of its endangered status), and would complicate conservation programs for *T. s. tetrataenia*. We propose that the current usage of the name *T. s. tetrataenia* (Cope in Yarrow, 1875) be retained on the basis of the regular, frequent and unambiguous usage since 1951, summarized in the list held by the Secretariat. We also propose that the current usage of *T. s. infernalis*, following Fitch (1941), be retained because we feel that the same arguments for nomenclatural stability that support the retention of *T. s. tetrataenia* rightly apply to the current usage of *T. s. infernalis*. Synonymy lists published by Fitch (1941, p. 585) and by Fox (1951, p. 260) demonstrate that no name other than *infernalis* is available for the California coast subspecies of *T. sirtalis*. (The name *Eutaenia imperialis* was included by both authors but is a nomen nudum. It was published in the synonymy of *Eutaenia proxima* by Coues & Yarrow, 1878, and was based on a subadult specimen, USNM 864, of *T. s. infernalis*). The current usage of *T. s. infernalis* can be retained by setting aside the type status of the holotype MNHN 846 and designating a neotype that is consistent with Fitch's (1941) diagnosis of the subspecies. This action would remove *infernalis* from the synonymy of *tetrataenia*, so allowing the usages of both names to continue.

7. We propose that the specimen 39197 in the California Academy of Sciences, San Francisco, be designated as the neotype of *T. s. infernalis*. This is a male, collected by Joseph Richard Slevin at Pacific Grove, Monterey County, California, in May 1914. The specimen was figured and fully described by Van Denburgh & Slevin (1918, p. 201, pl. 7) as a typical specimen of *T. s. infernalis*. Fitch (1941) included this specimen in his evaluation and diagnosis of *T. s. infernalis* and thus this was the first specimen of *T. s. infernalis* sensu Fitch (1941) with accurate locality data to be figured and described under that name. Furthermore, the locality is sufficiently distant from

the San Francisco Peninsula to eliminate any confusion with *T. s. tetrataenia*, and our examination of the specimen confirms that it does not overlap Cope's (in Yarrow, 1875) concept of *T. s. tetrataenia*.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary powers to set aside all previous fixations of type specimens for the nominal species *Coluber infernalis* Blainville, 1835 and to designate the male specimen, catalog no. 39197 in the California Academy of Sciences, San Francisco, as the neotype;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *infernalis* Blainville, 1835, as published in the binomen *Coluber infernalis* and as defined by the neotype designated in (1) above;
 - (b) *tetrataenia* Cope in Yarrow, 1875, as published in the trinomen *Eutaenia sirtalis tetrataenia*, and as defined by the lectotype USNM 21384 in the United States National Museum, Washington, D.C., designated by Fitch (1941).

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